Results

Nick

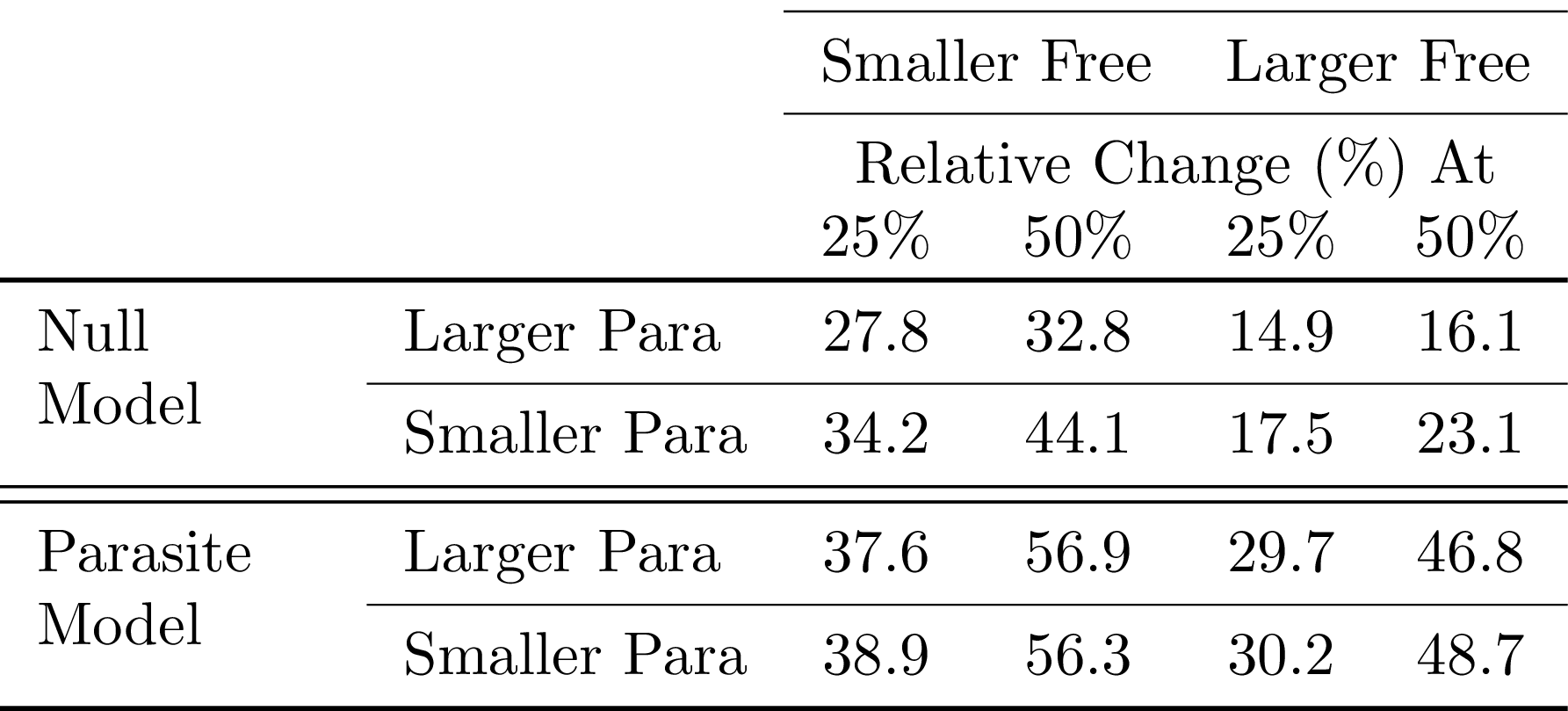
# Persistence of Final States

## Fixed web size

The figure shows the total persistence with 95% confidence intervals of all species in the two models with all body size configurations.

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Figure [fig:persistenceAll] shows the average persistence of the web ensemble with different body size ratios in the two dynamic models[[1]](#footnote-23). The decline in overall persistence with increasing parasite fractions cannot be entirely explained by higher parasite mortality as the persistence of free-living consumers also decreases with higher levels of parasitism; parasites cause non-parasite extinctions, especially at low levels of parasitism.



We found that food webs with smaller free livers () had higher levels of persistence in the absence of parasites then webs with larger free livers () at low levels of parasitism in the null model. However, this pattern reverses at higher levels of parasitism. As a result, the webs with smaller free livers saw much larger relative decreases than the food webs with larger free livers (table [tab:relDecrease]). Furthermore, larger parasites () caused smaller relative decreases in persistence than smaller parasites (). The persistence levels in three body size configurations were roughly constant after 25% parasitism. The final body size configuration combined the less resilient free-livers with the more disruptive parasites; persistence in this configuration continued a slight decrease up to 50% parasitism.

In the parasite model, overall persistence decreased monotonically with increasing parasite fraction and all four body size configurations had nearly identical overall persistence levels past 25% parasitism.

1. Think about what a null hypothesis might be in this setting: show what the line is if all parasites go extinct? If free livers maintain the same extinction level? Is that necessary.. Look up the numbers from Brose 2006; compare those results with the average body size ratio in each model (NB: Actually, I don’t think it’s a good idea; averaging the new bsr distributions is a bit silly since they become trimodal). Also compare average body size ratios within my models (NB: This could be useful): compare the free-living and parasitic subsets (and their average body size ratios) with the Brose results, for more direct connection to previous work. [↑](#footnote-ref-23)